HISTORY & RESEARCH

Perspectives

Introspection
- Wilhelm Wundt—1st lab, Germany
  - Structuralism
- William James—1st text, Harvard
  - Functionalism

Gestalt—total experience "the whole"
- Perception

Psychoanalysis—Freud

Stuart Little → Behaviorism—Watson (Little Albert), Skinner (operant conditioning)

Humanism (Maslow, Rogers

Biological—brain chemistry, hormones, etc.

Evolutionary (sociobiology) —impact of traits that promote survival of species

Cognitive—thinking patterns

Sociocultural—environment

Ethics

Animal research
- Clear scientific purpose
- Humane treatment
- Legal acquisition of subjects
- Limit suffering to least feasible

Human research
- Informed consent
  - Limit deception
  - No coercion
- Protect from harm
- Confidentiality
- Debrief afterwards

Psychological research

Limits of intuition
- Hindsight bias
- Overconfidence
- Confirmation bias

Scientific attitude
- Curiosity
- Skepticism
- Humility

Scientific method
- Theories
- Hypothesis
- Operational definitions
- Replication

Methodology
- Case study
- Survey
  - Wording effects
  - Random sampling
  - False consensus effect
- Naturalistic observation
  - * Must avoid Hawthorne Effect
- Correlational studies
  - Prediction
  - NOT CAUSATION
  - Illusory correlation
    - Superstition
- Experiment
  - (see **experimentation**)

observation bias → change how you act because you're being observed

Experimentation

Cause & effect

Procedure:
- Blind study
- Double-blind study
- Experimental condition vs. Control condition
- Independent variable
  - Experimenter manipulates
- Dependent variable
  - Experimenter measures
- Confounding variables
- Random selection
- Random assignment

Measuring data

Descriptive statistics
- Central tendency (averages)
  - Mean
  - Median
  - Mode
  - Normal curve
- Correlations (relationships)
  - Scatterplot
  - Correlation coefficient
- Variation
  - Range
  - Standard deviation

Inferential statistics
- Do my results matter?
- * Sample size influence
- * Significant differences
  - $p<.05$ (alpha level)

SHOUT
SHARE
IT

NEUROSCIENCE

Neural communication

Resting potential
- -70 mV inside
- Neuron is **polarized**

Action potential (all-or-none)
- Neurotransmitters bind to dendrites
- Neuron reaches –55 mV
  - Becomes **depolarized**
  - Sodium/potassium ions
- Signal moves down the axon
- Neurotransmitters release to synapse
- Must **repolarize**
  - Reuptake of neurotransmitters
  - Return to –70 mV
  - Refractory period (can't fire)

Myelin sheath
- Insulates motor neurons
- Speeds message
- Decay of myelin sheath
  - multiple sclerosis
  - Intelligence

Excitatory neurotransmitters
- Acetylcholine (skeletal muscles)
- Serotonin (depression/general well-being)
- Dopamine (high - schizophrenia; low—depression)
- Norephinephrine (Alertness, linked to fight-or-flight)
- Endorphins (pain relief)

Inhibitory neurotransmitter (GABA)

Effect of agonists/antagonists

The brain

Plasticity—neurons can be used for new purposes

Hindbrain:
- Cerebellum—coordination
- Medulla—breathing, heartbeat
- Pons—sleep, arousal, dreams
- Reticular formation—arousal

Midbrain:
- At the intersection of forebrain & hindbrain (spatial awareness)

Forebrain:
- Thalamus—sensory switchboard
- Limbic system—emotion
  - Hippocampus (memory)
  - Amygdala (fear, anger)
  - Hypothalamus (biological needs, e.g. hunger, sex, thirst)
- Cerebrum/cerebral cortex
  - Prefrontal cortex (planning, or ganization, risk assessment)
  - Frontal lobes (motor cortex, mirror neurons)
    - * Broca's area (speech)
  - Parietal lobes (somatosensory cortex)
    - * Angular gyrus
  - Temporal lobes (auditory cortex)
    - * Wernicke's area
  - Occipital lobes (visual cortex)

Organization of the nervous system

- CNS
  - Brain and spinal cord
  - Interneurons
- Peripheral nervous system
  - Somatic nervous system
    - Afferent neurons
    - Efferent neurons
  - Autonomic nervous system
    - Sympathetic nervous system
    - Parasympathetic nervous system

Hemispheric specialization

Split-brain surgery (corpus callosum severed)
*Used to treat uncontrolled seizures
Seen in left visual field, processed in rt. hemisphere

- Left hemisphere
  Language/logic
- Right hemisphere
  Nonverbal/spatial/ musical/recognition

Methods of study

- Structure
  - Lesions
  - CT scan
  - MRI
- Function
  - EEG
  - PET scan
  - fMRI

The endocrine system

Pituitary—master gland (directed by the hypothalamus)
Biochemically the same as neurotransmitters
Adrenal gland—stress hormones

DEVELOPMENT

PHYSICAL

Prenatal
- Zygote
- Embryo (2-8 wks)
- Fetus (8+ wks)

Teratogens
- Fetal alcohol syndrome
- Radiation
  - (8-15th week, migration)
  - Radiation: stops short
  - FAS: too far

Reflexes
- Moro
- Rooting
- Babinski
- Palmar

Maturation
- Cephalocaudal
- Proximodistal

Puberty
- Primary sex characteristics
- Secondary sex characteristics
- Frontal lobe development

Old age
- Recall vs. recognition
- Decay of fluid intelligence
- Consistency of crystallized Intelligence
- Dementia
- Alzheimer's disease

SOCIAL

Lev Vygotsky (social-cognitive)
- Zone of proximal development
  - Mentors

Lorenz's study of imprinting
Harlow's research on touch
Stranger anxiety
Ainsworth's attachment theory
- Strange situation paradigm
  - Secure attachment (60%)
  - Insecure attachment
    - Ambivalent
    - Avoidant

Baumrind's parenting styles
- Authoritarian
- Authoritative
- Permissive

Erikson's stages (psychsocial)
- Trust vs. mistrust
  - (0-1) basic trust
- Autonomy vs. shame & doubt
  - (1-2) independence
- Initiative vs. guilt
  - (3-5) initiation of tasks
- Competence vs. inferiority
  - (6-12) accomplishment
- Identity vs. role confusion
  - (13-20s) sense of self
- Intimacy vs. isolation
  - (20s to 40s) relationship
- Generativity vs. stagnation
  - (40s to 60s) contribution
- Integrity vs. despair

COGNITIVE

Schemas
- Assimilation
- Accommodation

Sensorimotor stage (0-2)
- Object permanence (6 mos)

Preoperational stage (2-7)
- Egocentrism
- Animism
- Symbolic thought begins

Concrete operational stage (8-12)
- Conservation
  - Volume
  - Area
  - Number
- Reversibility

Formal operational stage (12+)
- Hypothesis testing
- Abstract thinking
- Megacognition

Self concept
- 18 mo.—rouge test

MORAL

Kohlberg's theory
- Preconventional morality
  - Avoiding punishment
- Conventional morality
  - Accepting rules of society
- Postconventional morality
  - Ethics, abstract morality
  - No absolutes

Carol Gilligan
- Men - Rules & ethics
- Women - Relationships

Jonathan Haidt → go to Kohlberg
- Social intuitionist theory
- Gut-level reactions
  - (limbic system)

METHODS OF STUDY

Longitudinal research
↳ long-term

Cross-sectional research

STAGES OF DEATH/DYING (Kubler-Ross)

Denial … Anger … Bargaining … Depression … Acceptance

STATES OF CONSCIOUSNESS

Biology of sleep

- Biological rhythms
  - Circadian rhythm (25 hr cycle)
    - Light (superchiasmic nucleus)
    - Pineal gland (near thalamus)
      - Melatonin
    - Adenosine (sleep-inducing)
- Sleep stages
  - Prior to stage 1 (alpha waves)
  - Stage 1 (theta waves) 5 min.
    - Hypnagogic sensations
  - Stage 2 (K-complexes, sleep spindles)
    - Approx. 20 minutes
  - Stage 3 (<50% delta waves)
  - Stage 4 (>50% delta waves)
    - Stage 3 & 4—slow wave sleep
- Order of stages
  - 1, 2, 3, 4, 3, 2, REM, 2, 3, 4, 3, 2, REM
- REM—paradoxical sleep
  - Active brain, paralyzed body
- Benefits
  - Memory consolidation
  - Concentration
  - Mood
  - Moderates hunger/reduces obesity
  - Improves immune response
- Disorders
  - Insomnia (10-15% of adults)
  - Narcolepsy
  - Sleep apnea
  - Night terrors (stage 4)
  - Sleepwalking (stage 4)

Dreaming

- Freud's analysis
  - Manifest content vs.
  - Latent content
- Information-processing theory
  - Filing experience
  - Synthesizing memory
  - Pruning connections
  - Build neural pathways
- Activation-synthesis theory
  - Pons generates neural firing
- Lucid dreams
  - Conscious awareness of dream state

Hypnosis

- Mesmer (18th century)
- Susceptibility
  - Creativity, desire influences
- Therapeutic capacity
  - Posthypnotic suggestions
  - Pain alleviation
  - Selective attention?
- Theories:
  - Social influence theory
    - Emphasizes desire of subjects to do well
  - Divided consciousness theory
    - Emphasizes dissociation
    - Hilgard's "hidden observer"

Psychoactive drugs

- Tolerance/withdrawal
  - Involves neuroadaptation
- Addiction

- Depressants
  - Alcohol
    - Reduces inhibitions
    - Impairs activity of frontal lobe
    - Disrupts formation of LTM
  - Barbiturates (tranquilizers)
    - Reduce anxiety, mimic alcohol
  - Opiates (endorphin agonists)
    - Morphine, heroin, oxycontin

- Stimulants
  - Amphetamines/meth
  - Cocaine—rush/crash
  - Ecstasy—also a hallucinogen
    - Stimulates serotonin
    - Interferes w/sleep, impairs memory, reduces immune response

- Hallucinogens
  - LSD—serotonin agonist
  - Marijuana—cannabinoid agonist
    - Disrupts memory formation
    - Reverse tolerance

COGNITION

Concepts

Metacognition—wow!
Organization: ← analyzing other analyses
- Hierarchies
- Prototypes

Problem solving

Barriers:
- Fixations:
  - Functional fixedness
  - Mental set
- Confirmation bias
- Overconfidence

Approaches:
- Trial and error
- Insight
- Algorithm
- Heuristics
  - Representativeness heuristic
    - Based on prototypes
  - Availability heuristic
    - Based on vivid experience

Issues:
- Framing (wording)
- Belief bias
- Belief perseverance
- Illusory correlation
- Memory reconstruction
- Self-serving bias

Intuition

Factors:
- Blindsight
- Right-brain thinking
- Moral thinking (Haidt's theory)
- Automatic processing/implicit memory
- Creativity
- Thin slices ← finding things in narrow windows
- Subliminal stimulation
- Microexpressions
- Dual attitude system
  - Unconscious/conscious
  - Implicit/explicit
  - Gut-level/rational

About Language

Structure
- Phonemes
- Morphemes
- Grammar
  - Semantics
  - Syntax

Appearance
- Babbling (approx. 4 months)
- One-word stage (1 year)
- Two-word stage (telegraphic speech)
  - At 1 1/2 years
- No 3 word stage

Theories of language development

Skinner—nurture
- Behaviorist explanation
  - Follows usual learning pattern (Reinforcement/punishment)

Chomsky—nature
- Language acquisition device (innate)
- Evidence:
  - * Overregularization of language (or overgeneralization)
    - Ex: "I goed to the store."
  - * Common elements
    - Surface structure (syntax)
    - Deep structure (semantics)
  - * Critical period
    - Age 7 for language acquisition
    - Cochlear implants
      - Best results 2-4 year olds

Language & Thinking

Whorf's linguistic determinism theory (or linguistic relativity theory)
- language shapes thinking
- Evidence: bilingual advantage

Thinking in images (process simulation)

Animal thinking
- * Concept formation
- * Theory of mind—similar to 2 yr. old
- * Language: honeybees, ape language

INTELLIGENCE

Theories of intelligence

It's conceptual, not a thing
(reification—assuming it's a thing)
Single intelligence theory
Spearman: "g" represents related clusters of skills (used factor analysis)
Multiple intelligence theories
* Based on evidence from savants
Thurstone: primary mental abilities
7 clusters
Gardner: 8 intelligences
- linguistic, logical-mathematical, musical, spatial, kinesthetic, intrapersonal, interpersonal, naturalistic
Stenberg's triarchic theory
- analytical, creative, practical
Emotional intelligence (EQ)
Relates to success in family, career

Creativity

Convergent vs. divergent thinking
How to maximize:
Develop expertise
Keep a venturesome personality
Stay intrinsically motivated
Live in creative environment

Neurological evidence

Brain anatomy:
Larger brain (thickening of cortex due to enhanced connections?)
17% more synapses (maybe better neural plasticity?)
Einstein's brain—thicker in parietal lobe (math/spatial intelligence?)
Brain function:
Frontal lobe activity during IQ test questions
Perceptual speed correlates positively
Neurological speed (evoked brain response faster)
More efficient glucose consumption
Uses less, processes more efficiently?
Genes:
Identical twins highly correlated
Adopted children, little correlation
Heritability

Assessing intelligence

Binet's test (to identify special needs)
Terman (Stanford)
Supported eugenics (Social Darwinism)
American version (Stanford-Binet)
MA/CA X 100 = IQ
Wechsler Adult Intelligence Scale (WAIS)
Wechsler Intelligence Scale for Children (WISC)
Bias: Stereotype threat, gender bias

Creating tests

Standardization → Binet
Representative sample, compare scores
Chart on normal curve
68-95-99.7 (standard deviation)
Flynn effect
IQ scores improving over time
Principles of test creation
Reliability: test needs to get same results each time it's given
Test-retest reliability
Split-half reliability
Validity: test needs to measure what it's designed to measure
Content validity (material reflects what should be tested)
Face validity
Criterion-related validity (matches in dependent measure of what the test is designed to measure)
Concurrent validity
Predictive validity
May be affected by range of scores tested
Construct validity (use a previous validated instrument and correlate to that test's results
Extremes of intelligence:
Mental retardation:
Mild (50-70 IQ), moderate (35-50 IQ), Severe (20-35 IQ)
Down syndrome (extra 21st chromosome)
Gifted (Terman's study — "Termites")
Healthy, well-adjusted, successful
No tracking, special treatment in China/Japan

SENSATION

The basics

- Sensation vs. perception
  - Bottom-up processing ← sensation
  - Top-down processing ← perception
    - Prosopagnosia
- Thresholds
  - Psychophysics
    - Absolute threshold
    - Signal detection theory
    - Subliminal messages
    - Difference threshold (JND)
      - Weber's Law/Fechner's Law
- Sensory adaptation
- Transduction
- Receptors

Other senses

- Touch
  - Pressure, temperature, pain
    - Nociceptors
  - Gate-control theory
- Taste (gustatory sense - chemical)
  - Sweet, sour, salty, bitter, umami
  - Taste buds
  - Sensory interaction
    - McGurk effect
- Smell (olfactory sense - chemical)
  - Does not go through the thalamus
  - Direct route to limbic system
- Kinesthesis
- Vestibular sense
  - semicircular canals
- Synaesthesia

Vision

- Light energy
  - Wavelength (color)
  - Amplitude (brightness)
- Parts of the eye
  - Cornea
  - Pupil
  - Lens
    - Accommodation
  - Retina (transduction here)
    - Rods (120 million)
    - Cones (6 million)
    - Fovea
  - Bipolar cells
  - Ganglion cells
  - Optic nerve to occipital lobe
    - Blind spot
- Visual acuity
  - Nearsightedness/farsightedness
- Feature detectors
- Parallel processing
- Blindsight
- Change blindness

- Retina to thalamus to cortex

- Color interpretation
  - Young-Helmholtz theory
    - Subtractive color mixing
    - Additive color mixing
  - Opponent-process theory
    - Afterimages
- Color constancy

Audition (hearing)

- Sound energy
  - Frequency (pitch)
  - Amplitude (loudness)
    - Measured in dB (decibels)
      - Every 10 dB = 10 times louder
- Parts of the ear
  - Outer ear
    - Pinna (visible part)
    - Auditory canal
  - Middle ear
    - Tympanic membrane (eardrum)
    - Ossicles (hammer, anvil, stirrup)
  - Inner ear
    - Oval window
    - Cochlea
      - Basilar membrane
      - Hair cells (transduction here)
      - Organ of Corti
    - Semicircular canals (NOT for hearing)
    - Auditory nerve to temporal lobe
- Perceiving sound
  - Place theory
  - Frequency theory
    - Volley principle
- Sound localization
- Hearing loss
  - Sensorineural hearing loss
    - Cochlear implant
  - Conduction hearing loss

PERCEPTION

The basics

- Sensation vs. perception
  - Bottom-up processing
  - Top-down processing
    - Prosopagnosia
- Selective attention
  - Cocktail party effect
  - Inattentional (change) blindness
  - Choice blindness
- Visual capture

Perceptual organization

- Figure-ground relationship

- Gestalt principles
  - Proximity
  - Similarity
  - Continuity
  - Connectedness
  - Closure

Visual perception

- Depth perception
  - Binocular cues
    - Retinal disparity
    - Convergence
  - Visual cliff
- Monocular cues
  - Linear perspective
  - Relative size
  - Interposition
  - Relative clarity
  - Texture gradient
  - Relative height
    - Light & shadow
- Motion perception
  - Relative motion (motion parallax)
  - Stroboscopic movement
  - Phi phenomenon
- Constancies
  - Color constancy
  - Size constancy
  - Shape constancy
  - Lightness constancy
- Illusions
  - Muller-Lyer illusion
    - Cultural influence
  - Ponzo illusion
  - Moon illusion
- Sensory deprivation
  - Critical periods

Other principles

- Perceptual adaptation
- Perceptual set
- Context effects

- Human factors

- ESP (extra-sensory perception)?
  - Parapsychology
  - Telepathy
  - Clairvoyance
  - Precognition
  - Psychokinesis
  - Way to test: Ganzfeld procedure

LEARNING

Classical conditioning

Associative learning
- allows prediction (associate stimuli)
- respondent behavior

Pavlov's dogs (1904 Nobel prize)
* US (food) leads to:
  UR (salivation to food)
* CS (bell) becomes associated with US, leads to:
* CR (salivation to bell)

Elements of classical conditioning:
- Acquisition
- Extinction
- Spontaneous recovery
- Generalization
- Discrimination

Implications:
- Rescorla's research on predictability
- Garcia's research of biological predispositions
  * easier to condition food aversions to taste rather than sight or sound
  * easiest to condition behaviors that promote survival

Applications:
- Aversive conditioning—pairing a negative stimulus with a desired stimulus can help kick bad habits
- Drug addicts sometimes have cravings related to environment
- Classical conditioning of immune response (Ader & Cohen study)
- Extinction can help cure phobias

Operant conditioning

Associative learning
- consequences of behavior
- operant behavior

Thorndike's Law of Effect

Skinner
* Operant chamber (Skinner Box)
* Shaping
  - Successive approximations
* Discrimination

Reinforcement
- Positive reinforcement—pleasurable stimulus after a response (strengthens the response)
- Negative reinforcement—reduces or removes a negative stimulus (still strengthens the response)
* Primary reinforcers (water, food, etc.) vs. secondary reinforcers (money, etc.)
* Schedules of reinforcement
  - Continuous (rapid learning)
  - Partial (intermittent)
    - Ratio (certain # of behaviors)
      * Fixed (5 visits to restaurant = free meal)
      * Variable (slot machine)
    - Interval (certain period of time)
      * Fixed (ex. each day @ 3 p.m.)
      * Variable (ex. shooting stars)

Punishment
- Positive punishment (add bad thing)
- Negative punishment (take away good)

*Both create avoidance behaviors (ex. lie—becomes neg. reinforced)

Latest contributions

Latent learning (Tolman)
- cognitive maps (demonstrate learning after award is given)

Intrinsic motivation (desire to do something for its own sake)
- When rewards are given for activity that is intrinsically rewarding, enjoyment declines (overjustification effect)

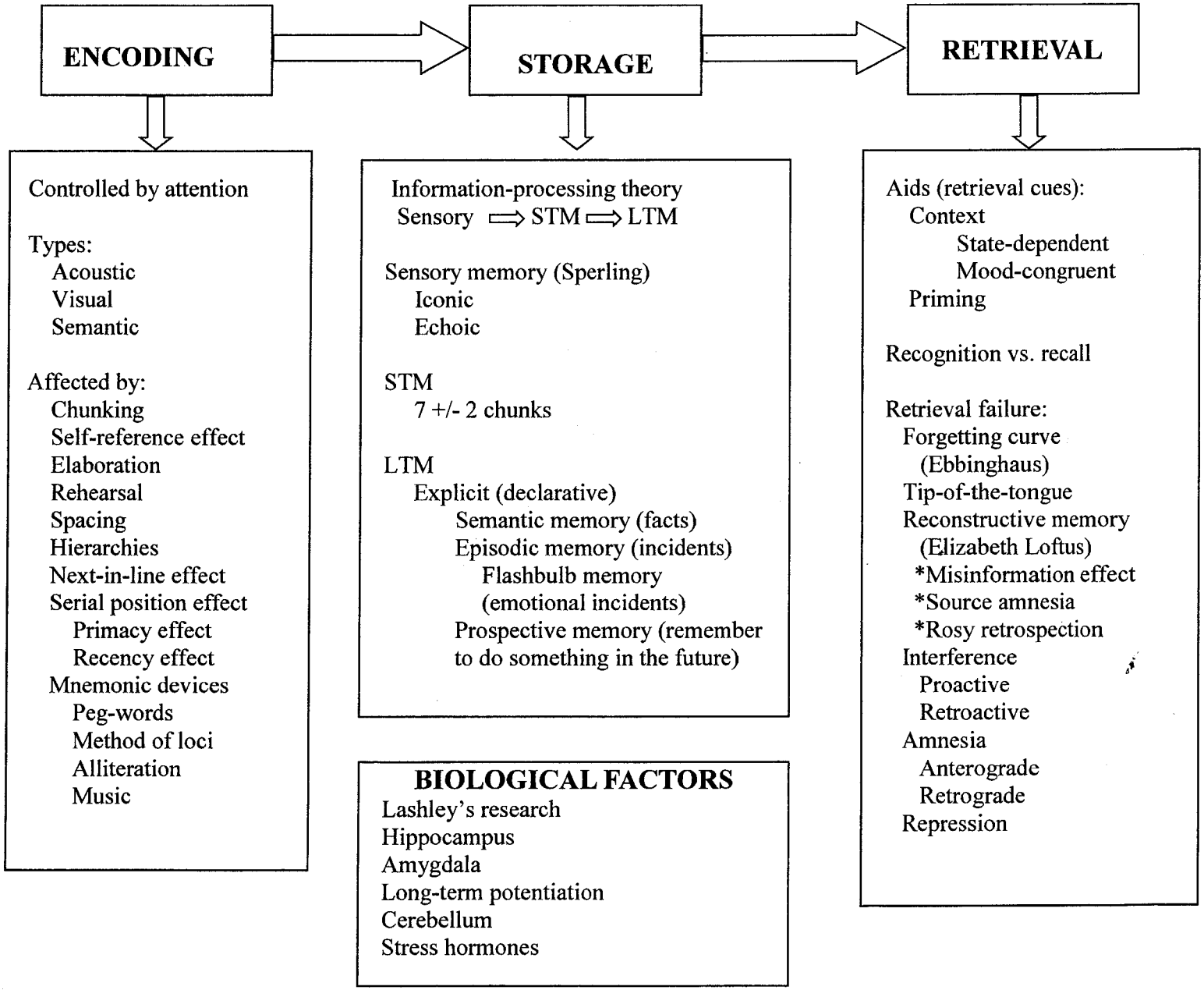
Extrinsic motivation (desire to do something for reward)
- Should be recognition for a job well done

Biological predispositions
- Easier to condition behaviors that match natural behavior

Legacy of Skinnerian thinking
- Criticism of deterministic philosophy, dehumanization, loss of personal freedom

Observational learning (modeling)
- Mirror neurons (biological basis)
  - promote empathy
- Bandura's Bobo doll study
  - Child watches adult, mimics
  - Increase of violence, aggression
- Media influence
  - Violent crimes—87% on TV, 13% real life
  - Violent action is correlated to viewing violence (media, video games) - leads to desensitization

MEMORY


ENCODING
STORAGE
RETRIEVAL
Controlled by attention
Types:
Acoustic
Visual
Semantic
Affected by:
Chunking
Self-reference effect
Elaboration
Rehearsal
Spacing
Hierarchies
Next-in-line effect
Serial position effect
Primacy effect
Recency effect
Mnemonic devices
Peg-words
Method of loci
Alliteration
Music
Information-processing theory
Sensory ⇨ STM ⇨ LTM
Sensory memory (Sperling)
Iconic
Echoic
STM
7 +/- 2 chunks
LTM
Explicit (declarative)
Semantic memory (facts)
Episodic memory (incidents)
Flashbulb memory
(emotional incidents)
Prospective memory (remember
to do something in the future)
BIOLOGICAL FACTORS
Lashley's research
Hippocampus
Amygdala
Long-term potentiation
Cerebellum
Stress hormones
Aids (retrieval cues):
Context
State-dependent
Mood-congruent
Priming
Recognition vs. recall
Retrieval failure:
Forgetting curve
(Ebbinghaus)
Tip-of-the-tongue
Reconstructive memory
(Elizabeth Loftus)
*Misinformation effect
*Source amnesia
*Rosy retrospection
Interference
Proactive
Retroactive
Amnesia
Anterograde
Retrograde
Repression

MOTIVATION

Physiology of hunger

Keys' research
Cannon's research
Body chemistry
  Insulin up, glucose down
  Hypothalamus stimulation
    Lateral—hunger increases
      Orexin produced
    Ventromedial—hunger declines
  Hormones
    Ghrelin—hunger increases
    PYY—suppresses hunger
  Proteins
    Leptin—decreases hunger
    Orexin—increases hunger

Psychology of hunger

Neophobia (avoidance of unfamiliar food)
Eating disorders
  Anorexia nervosa
    At least 15% underweight
    Continue to view self as fat
  Bulimia nervosa
    Binge-purge pattern
    Not necessarily low weight
  Obesity (30% in US)

Theories of motivation

Instinct theory (evolutionary)
  - fixed patterns, unlearned
Drive-reduction theory (Clark Hull)
  Object is homeostasis
  - Pulled by incentives (external)
Arousal theory
  Yerkes-Dodson Law
    Easy task—high arousal
    Difficult task—moderate
Maslow's hierarchy of needs
  Physiological at base, then safety, belonging & love, esteem, self-actualization, transcendence
Need to belong
    Ostracism—activates anterior cingulate cortex (also activates with pain)

Achievement motivation

Flow
I/O psychology
Personnel psychology
  To avoid the interviewer illusion
    Structured interviews
    360-degree feedback
Grit (determination, breeds success)
Theory X vs. Theory Y
Task leadership vs. social leadership
  Great person theory
  Transformational leadership

Physiology of sex

Kinsey report
Masters & Johnson research
  Sexual response cycle
    Excitement—plateau—orgasm—resolution (refractory period)
  Sexual disorders
    Premature ejaculation
    Erectile dysfunction
    Orgasmic disorder
Hormones
  Estrogen / androgens (testosterone)

Psychology of sex

External stimuli
  Habituation occurs
  Decreased satisfaction w/sexual partners
Gender roles/gender identity
Sexual orientation
  Estimated 3-4% men, 1-2% women
  But could be higher (response bias)
  Identical twin studies support genetic basis
  Hypothalamus differences (LeVay)
  Anterior commissure differences
  Fraternal birth order effect
  Same sex attraction in animals (6-10%)
  Finger length/fingerprint ridges (7th/16th week of development)

EMOTION

Theories

Emotion—arousal, expressive behavior, and conscious experience

James-Lange theory: physiological response 1st, emotion 2nd
Cannon-Bard theory: physiological response at the same time as experience of emotion
Schachter's two-factor theory: physiological arousal, then appraisal (cognition) creating emotion label
- Spillover effect: Stirred up physiological state can be misinterpreted as emotional state

Zajonc's theory: Subliminal processing of emotions (neural pathway is from thalamus to amygdale)
Lazarus: Cognitive appraisal controls emotion

Nervous system

Autonomic arousal
- Sympathetic nervous system: pupils dilate, dry mouth, perspiration, fast breathing, accelerated heart rate, slowed digestion, stress hormones released (fight-or-flight)
- Parasympathetic nervous system: returns body to original calm state

Expressed emotion

Nonverbal communication
- Easily detect threatening cues
- Thin slices (quick views of interactions) - some better at reading
- Gender differences
  - Women tend to be more able to read non-verbal cues
  - Also tend to communicate emotion better
- Ekman's research
  - Microexpressions
  - Universal emotional expressions
    - Happiness, surprise, fear, sadness, anger, disgust
- Facial feedback: we feel the emotion we show
- Behavior feedback: we feel the emotion our body looks like it's feeling
- Empathy: feeling another's emotion
  - Mirror neurons
- Reading emotion: autistic people show problems in reading emotional states of others

Experience of emotion

Emotion = valence (pleasant/unpleasant) and arousal (low/high)

Fear—learn early, through conditioning, observation
- * Amygdala key
- * Anterior cingulated cortex

Anger -
- Catharsis hypothesis—release
  - But creates more anger
    - Reinforcement
- How to control?
  - Waiting to act
  - Exercise
  - Forgiveness

Happiness (subjective well-being)
- * Feel-good, do-good phenomenon
- * People who value love over money report higher life satisfaction
- * Adaptation-level phenomenon
- * Relative deprivation principle
- **Predictors:** high self-esteem, optimism, close friendships/marriage, engaging work, meaningful faith, good sleep, exercise
- **Contributors:** know that wealth doesn't make you happy, control your time, act happy, seek enjoyable work, exercise, sleep, make relationships a top priority, help others, be grateful, seek spiritual fulfillment

STRESS & HEALTH

Stress response

Stressor—leads to eustress or distress
  Depends on appraisal
Fight-or-flight—Walter Cannon
  Adrenal glands
    * Epinephrine (quick response)
    * Glucocorticoids (slow response)
General Adaptation Syndrome—Selye
  Alarm—activation of sympathetic nervous system
  Resistance—deal with/fight
  Exhaustion—breakdown of immune system (telomeres in DNA affected, can't replicate); hippocampus can't make new memories as well
Illness
  Heart (Friedman & Rosenman study)
    Type A—anger, reactive vs.
    Type B—relaxed
    69% of heart attack victims were A
  Immune system impaired
    * B lymphocytes (fight bacteria—formed in bone marrow)
    * T lymphocytes (formed in thymus, fight viruses, cancers)
    * Macrophages ("big eaters
Conditioning the immune system
  (Ader & Cohen study)
    * Sweetened water with immune suppressing drug—created classically conditioned immune suppression
    * Placebo effect in illness?

Coping

Problem-focused (address stressor)
Emotion-focused (seeks support from others)
Exercise
Biofeedback
Meditation
Spiritual connection

Conflict

Approach-approach
  Win-win situation
Avoidance-avoidance
  Lose-lose situation
Approach-avoidance
  One choice, pros and cons

Obesity & health

Physiology
  Fat cells—30-40 million
    Divide if too full, can't get rid of fat cells
  Set-point/metabolism
    Fat cells—low metabolic rate
      Metabolism slows when fat cells are deprived, tries to maintain fat level
  Genetics
    Adopted children's weight not correlated to adoptive parents
    Identical twins correlation +.72
    Fraternal twins correlation +.32
  Chemical effect
    Leptin in rats—when up, weight down

Losing weight?
  2/3 of women, 1/3 of men trying

PERSONALITY

Psychoanalytic

Freud's psychosexual theory
- Structure: id (pleasure principle), ego (reality principle), superego (morals, ideals)
- Levels of awareness: conscious, pre-conscious, unconscious
- Development: oral, anal, phallic (Oedipal complex, penis envy), latency, genital
  - Fixations
- Defense mechanisms - reduce anxiety
  - Repression (primary)
  - Regression
  - Reaction formation
  - Rationalization
  - Displacement
  - Sublimation
  - Projection
  - Denial

Neo-Freudians
- Adler—social, not sexual tensions
  - * Birth order, inferiority complex
- Horney—rejected penis envy idea
- Carl Jung—collective unconscious

Assessment
- Projective tests
  - Rorschach
  - TAT - Thematic Apperception Test
  - Draw-a-person
  - Sentence completion

Evaluation:
- * Repression often not shown (vivid memory often results after trauma)
- * Terror management theory

Humanism

Maslow—self-actualization
- Hierarchy of needs
  - * Safety—security—love—self-esteem—self-actualization

Carl Rogers—person-centered
- Genuineness
- Unconditional positive regard
- Empathy

Trait theory

Greeks—4 humors (choleric, sanguine, melancholic, phlegmatic)

Allport (student of Freud)

Eysenck—unstable/stable; introverted/extroverted

Costa & McCrae (Big 5)
- OCEAN (openness, conscientiousness, extraversion, agreeableness, neuroticism)

Assessment
- MMPI (used factor analysis, empirically derived)
- Cattell's 16PF

Person-situation controversy
- Walter Mischel—emphasizes power of situational factors

Expressive style—thin slices

Barnum effect—astrology, etc.

Social-cognitive

Reciprocal determinism—interplay of
- Personal factors/internal cognition
- Behavior
- Environment

Personal control (Julian Rotter)
- External locus of control
- Internal locus of control
- *Without internal locus, learned helplessness results

Explanatory style (Martin Seligman)
- Optimistic
  - Unstable, specific, external
- Pessimistic
  - Stable, global, internal

Bandura
- Personality influenced by observational learning, outside influences (Bobo doll study)
- Self-efficacy (belief in ability to do things that lead to positive outcomes)

The self

Hazel Markus— "possible selves"

Spotlight effect

Self-referencing effect

Self-esteem
- Defensive vs. secure

Self-serving bias

PSYCHOLOGICAL DISORDERS

Medical model

Foundation
- **U**—unjustifiable
- **M**—maladaptive
- **A**—atypical
- **D**—disturbing to self or others

Measurement
- DSM-IV-TR (classification of disorders)
  - Axis 1—clinical syndrome?
  - Axis 2—personality disorder or mental retardation?
  - Axis 3—general med. Condition?
  - Axis 4—psychosocial or environmental problems?
  - Axis 5—global assessment of functioning (0-100)

Diagnostic labeling
- Advantages:
  - Appropriate treatment
  - Stimulate research
  - Payment of insurance
- Disadvantages:
  - Rosenhan's study—labeling leads to self-fulfilling prophecies? Cause interpretations of behavior?

Insanity—when?
- M'Naughten rule—is the defendant unable to distinguish right from wrong because of mental defect?
- 90% of those with disorders are not dangerous to others

Anxiety disorders (#7)

Panic disorder
- strikes suddenly
- panic attacks (seem like heart attacks)
- often linked to agoraphobia

Phobias—focused fear

Obsessive-compulsive disorder (OCD)
- Obsessions—thoughts
- Compulsions—behaviors

PTSD (post-traumatic stress disorder)

GAD (generalizaed anxiety disorder)
- Free-floating anxiety

Source:
- Behavioral interpretation
  - * Classical conditioning & generalization
  - * Negative reinforcement maintains the fear
- Observational learning?
- Biology (natural selection, genes, activity in anterior cingulated cortex, activity in amygdale, GABA)

Dissociative disorders (#10)

Dissociative identity disorder
- multiple personality

Dissociative fugue
- person doesn't remember past, wakes up in strange location

Dissociative amnesia
- person doesn't remember past

No biological explanations

Mood (affective) disorders (#6)

Depression (common cold of disorders)
- Major depressive disorder (more than 2 weeks of debilitating depression)
- Dysthymic disorder (more than 2 years feeling bad most days)

Bipolar disorder
- Mania (restlessness, risk-taking, craziness, fast talking) alternates with depression
- May be fast cycling or slow cycling

Explanations:
- Genetic predispositions (linkage analysis, association studies)
- Brain chemistry (serotonin, norephinephrine, dopamine; decreased activity in left frontal lobe
- Social-cognitive
  - Self-defeating beliefs (learned helplessness)
  - Optimistic Explanatory Style
    - Stable, global, internal (depressed)
    - Temporary, specific, external (non-depressed)
  - Vicious cycle of depression:
    - Stressful experience....leads to
    - Negative explanatory style... leads to
    - Depressed mood... leads to
    - More stressful experiences...and the cycle begins again

Fight depression by: changing environment, reducing self-blame, making positive predictions about the future, exercise, become focused on helping others, laugh more

DISORDERS (CONTINUED)

Schizophrenia (#5)

Considered the "cancer" of disorders
1% of population worldwide (suggests biological basis)
Involves a break with reality (psychosis)
NOT multiple personality

Common symptoms:
* Disorganized thinking -
  Delusions (false beliefs)
  Paranoia (persecution)
  Word salad (bizarre speech)
* Disturbed perceptions
  Hallucinations (auditory most often)
* Inappropriate actions/emotions
  Reactivity
  Flat affect
  Catatonia
- Subtypes of symptoms:
  Positive symptoms (exhibit odd behavior)
  Negative symptoms (normal behavior absent)
- Either chronic (*process*—develops slowly) or acute (*reactive*—develops quickly)

Patterns:
Paranoid schizophrenia
Disorganized schizophrenia
Catatonic schizophrenia
Undifferentiated schizophrenia
Residual schizophrenia

Explanations of schizophrenia

Brain abnormalities
Dopamine overactivity
* D4 receptors 6 X normal
Glutamate—may relate to negative symptoms
Enlarged ventricles
Shrunken thalamus
Environmental factors
* Low birth weight, famine, oxygen deprivation?
* Virus during pregnancy? Flu link during 2nd trimester
Genetic factors
* Much higher chance of shared schizophrenia with identical vs. fraternal twins
Psychological factors/warning signs
* Birth complications
* Mother with schizophrenia
* Separation from parents
* Disruptive or withdrawn behavior
* Poor muscle coordination
* Poor attention span
* Poor peer relationships/solo play
* Emotional unpredictability

Typical onset—teens or early 20s

Personality disorders (#16)

Cluster A (eccentric)
Paranoid personality disorder
Schizoid personality disorder—odd, withdrawn behavior
Schizotypal personality disorder—with some schizophrenic-like symptoms
Cluster B (dramatic)
Antisocial personality disorder—lack of remorse, empathy (mirror neurons); typical onset about 8 yrs.
Borderline personality disorder—on the borderline of psychosis
Histrionic personality disorder—dramatic personality
Narcissistic personality disorder—extreme self-absorption
Cluster C (anxious)
Avoidant personality disorder—stays away from others
Dependent personality disorder
Obsessive-compulsive personality disorder

Somatoform disorders (#8)

Somatization disorder—body problem caused by psychological problem (ex. ulcers)
Conversion disorder—psychological problem converted to non-biological physical problem (ex. paralysis in "Heidi")
Hypochondriasis

THERAPIES

Psychoanalysis

Based on Freudian ideas
- Repressed ideas must be accessed
- Insight is the goal

Methods
- Free association
- Resistance
- Dream analysis
  - Latent content most important
- Transference

Duration
- Years

Psychodynamic therapy—same foundation, less intense

Humanistic

Focus: boost self-actualization (Maslow)
Become more self-accepting

Method:
- Client-centered therapy
  - active listening (no judgment)
    Reflect feelings of client
  - non-directive
- Therapist: genuineness, unconditional positive regard, empathy

Goal: promote personal growth, personal responsibility

Behavioristic

Classical conditioning applications:
- Counterconditioning—replace previous fear response with new relaxation response
  - Exposure therapy (Mary Cover Jones)
    Gradual exposure to feared object
  - Systematic desensitization (Wolpe)
    Anxiety hierarchy, then relaxation
  - Virtual reality exposure therapy
  - Implosion therapy
    Includes flooding
- Aversive conditioning (substitute neg. response for unwanted behavior)

Operant conditioning applications:
- punishment (bed-wetting buzzers)
- behavior modification
  * token economy

Cognitive therapy

Aaron Beck (cognitive triad)
Albert Ellis (RET)
Stress inoculation training (change in thinking patterns to stress)
Cognitive-behavioral therapy

Group/family therapy

Saves time/money
Humanistic foundation
Often as effective as individual therapy

Effectiveness

People report that therapy is effective
- * But regression toward the mean?
- * Selective recall
- * Eysenck's research: 2/3 improved with or without therapy

Depression: cognitive, interpersonal, behavior
Anxiety: cognitive, exposure, behavioral
Bulimia: cognitive-behavioral therapy
Other unusual treatments:
- EMDR— For trauma victims
- Light exposure therapy—for SAD

Biomedical therapy

1950's—deinstitutionalization
Antipsychotic medications (D2 antagonists):
- Chlorpromazine (Thorazine) - pos. symptoms
- Clozapine (Clozaril) - negative symptoms
- * Problem: tardive dyskinesia
- Atypical antipsychotics (D2 & serotonin antagonists) - fewer side effects

Antianxiety meds: Xanax, Valium, Ativan (GABA agonists)
Antidepressants: also for OCD, anxiety
- SSRI's—Prozac, Zoloft, Paxil, etc.

Mood stabilizers
- Lithium—bipolar
- Depakote—bipolar (originally for seizures)

Brain stimulation
- ECT (electroconvulsive therapy)
- rTMS (magnetic stimulation)

Surgery: Lobotomy (Moniz)

SOCIAL PSYCHOLOGY

Attribution theory

Internal vs. external attributions
* Fundamental attribution error
* Actor-observer bias
* Self-serving bias

Attitude change

Cognitive/affective components of attitudes (attitude vs. opinion)
Action affecting attitudes
* Foot-in-the-door
* Door-in-the-face
Persuasion
* Central route to persuasion
* Peripheral route to persuasion
Role playing (Zimbardo prison study)
Cognitive dissonance (Festinger)

Group influence

Conformity (Asch study)
* chameleon effect
* mood linkage (mimicry)
Normative social influence vs. Informational social influence
Obedience (Milgram's study)

Group behavior

Social facilitation vs. social inhibition
* related to Yerkes-Dodson Law

Social loafing

Deindividuation
* loss of identity, others don't know who you are

Group polarization
* movement to more extreme positions

Groupthink (Janus)
* influenced by desire for harmony

Minority influence
* self-confidence, determination key

Prejudice (attitude) — leads to discrimination (behavior)
* Social roots: social inequality, blame-the-victim, in-group vs. out-group leading to in-group bias
* Emotional roots: Fear, anger (leads to scapegoating)
* Cognitive roots: Categorization, availability heuristic, just-world phenomenon
* Jane Eliot study—children and stereotyping
- self-fulfilling prophecies

Aggression and conflict

Biology: genetics, amygdala, decreased frontal lobe activity, testosterone levels
Psychology
* Frustration-aggression principle
* Modeling (observational learning)
* Social scripts (mental tapes on how to act)
* Video games?
* Catharsis hypothesis (builds more anger)
Conflict
* Social traps
- pursue self-interest, everyone loses
* Enemy perceptions
- mirror-image perceptions

Attraction and altruism

Passionate love (two-factor theory)
vs. companionate love (key is equity, self-disclosure)
* Physical attractiveness key
* Similarity
* Proximity (mere exposure effect)
Altruism
Bystander affect
* diffusion of responsibility
* pluralistic ignorance
* Explained by social exchange theory
* Reciprocity norm
* Social responsibility norm
Peacemaking, GRIT
*Superordinate goals